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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
HARVEY, DIONNE	

ART UNIT	PAPER NUMBER
2643	

DATE MAILED: 09/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/980,809	RUDOLPH, DIETMAR	
	Examiner	Art Unit	
	Dionne N Harvey	2643	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10/01*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore,

the step of storing the transmitted parameter values and performing a frequency prognosis, as recited in claims 7 and 11;

the step of determining alternative transmit frequencies, as recited in claim 8;

and the step of providing a backward channel to an AM transmitter as recited in claim 12,

must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement

Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 4-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ballard US 6,397,041).

Regarding claim 4, Ballard teaches a broadcast monitoring and control system wherein a monitoring receiver **106** may be located in the target area, or located in a nearby region with respect to the target area as disclosed in column 4, lines 41-48, which reads on "disposing at least one receiver station in or adjacent to a target area";

In column 5, lines 35-37, Ballard teaches that the receiver receives a modulated high frequency signal which is then converted to a lower frequency, which reads on "a high frequency digital signal";

In column 4, lines 22-26, Ballard teaches that the monitoring receiver **106** provides a feedback signal to the transmitter **100** indicating the quality of the received signal, and in column 3, lines 10-12, Ballard teaches that upon receiving the transmitted

signal, the monitoring receiver **106** determines the carrier-to-noise parameter value, which reads on "evaluating quality data of a received high frequency digital signal using the at least one receiver station so as to determine corresponding parameter values";

In column 4, lines 35-40, Ballard teaches that the carrier-to-noise parameter is provided to the transmitter, reading on "transmitting the corresponding parameter values to a broadcast transmitter";

In column 5, lines 2-5, Ballard teaches that the signal power processor **204** controls the modulator **200** such that the power of the transmitted signal is adjusted in accordance to the feedback signal from the monitoring receiver **106,** which reads on "influencing at least one of a number of modulation stages and a coding of the transmission using the transmitted parameter values.";

In column 2, lines 35-41, Ballard teaches that the present invention can be implemented in a computer readable medium, or a computer network wherein program instructions are sent over **electronic communication lines**, and in column 6, lines 30-33, Ballard teaches that a communication link may be established from the transmitter **100** to the monitoring receiver **106** via the Internet. Ballard does not explicitly teach that the electronic communication line is the Internet, nor does Ballard explicitly teach that the monitoring receiver may also transmit to the transmitter via the Internet. However, in Ballard's embodiment wherein the Internet is provided as a means for transmitting data to the monitoring receiver from the transmitter, it would be obvious for one of ordinary skill in the art at the time of the invention to also use the Internet for transmitting the carrier-to-noise parameter values from the monitoring receiver to the

transmitter, so as to negate the need for establishing an additional means for communication between the two devices.

Regarding claims 5 and 9, Ballard does not clearly teach that the method for quality control of a digital radio transmission is for use with a digital radio transmission as recommended by the international telecommunication union (ITU) protocol. However, it would have been obvious for one of ordinary skill in the art at the time of the invention to configure the method of quality control as disclosed by Ballard, for use with a broadcast transmission system as recommended by ITU or another protocol, given that said protocols are well known in the art for providing a standard with respect to telecommunication networks in government and in private-sector, and doing so would increase the applicability of the method for quality control, as taught by Ballard.

Regarding claims 6 and 10, Ballard teaches that the transmission is a broadcast transmission.

Regarding claims 7 and 11, in figure 1,Ballard teaches memory **108** for storing the transmitted corresponding parameter values in a data base. Ballard does not clearly teach that based upon the stored parameter values, a frequency prognosis is performed. However, the Examiner takes Official Notice that the relationship between signal interference and frequency band is well known in the art i.e., frequency band interference from adjacent bands cause by excessive transmit power or interference commonly associated with frequency band reassignment or user saturation etc., all of which may be alleviated by a change of frequency. It therefore, would have been obvious to, as an alternative, improve signal quality by identifying and switching to

another frequency band(s) for signal transmission. *The Examiner has cited Jensen US 6,496,698, below.*

Regarding claim 8, Ballard teaches a broadcast monitoring and control system wherein a monitoring receiver **106** may be located in the target area, or in a nearby region with respect to the target area as disclosed in column 4, lines 41-48, which reads on "disposing at least one receiver station in or adjacent to a target area";

In column 5, lines 35-37, Ballard teaches that the receiver receives a modulated high frequency signal which is then converted to a lower frequency, which reads on "a high frequency digital signal";

In column 4, lines 22-26, Ballard teaches that the monitoring receiver **106** provides a feedback signal to the transmitter **100** indicating the quality of the received signal, and in column 3, lines 10-12, Ballard teaches that upon receiving the transmitted signal, the monitoring receiver **106** determines the carrier-to-noise parameter value, which reads on "evaluating quality data of a received high frequency digital signal using the at least one receiver station so as to determine corresponding parameter values";

In column 4, lines 35-40, Ballard teaches that the carrier-to-noise parameter is provided to the transmitter, reading on "transmitting the corresponding parameter values to a broadcast transmitter";

In column 5, lines 2-5, Ballard teaches that the signal power processor **204** controls the modulator **200** such that the power of the transmitted signal is adjusted in accordance to the feedback signal from the monitoring receiver **106,** which reads on

"influencing at least one of a number of modulation stages and a coding of the transmission using the transmitted parameter values.";

In column 2, lines 35-41, Ballard teaches that the present invention can be implemented in a computer readable medium, or a computer network wherein program instructions are sent over **electronic communication lines**, and in column 6, lines 30-33, Ballard teaches that a communication link may be established from the transmitter **100** to the monitoring receiver **106** via the Internet. And, as discussed in the rejection of claim 4, above, it would be obvious for one of ordinary skill in the art to also use the Internet for transmitting the carrier-to-noise parameter values from the monitoring receiver to the transmitter, so as to negate the need for establishing an additional means for communication between the two devices.

Ballard does not clearly teach that alternative transmit frequencies are determined using the transmitted parameter values received from the monitoring receiver. However, as discussed in the rejection of claim 7, above, the Examiner takes Official Notice that the relationship between signal interference and frequency band is well known in the art i.e., frequency band interference from adjacent bands cause by excessive transmit power or interference commonly associated with frequency band reassignment or user saturation etc., all of which may be alleviated by a change of frequency. It therefore, would have been obvious to, as an alternative, improve signal quality by identifying other frequency bands for signal transmission. *The Examiner has cited Jensen US 6,496,698, below.*

3. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ballard US 6,397,041) in view of Mayo (US 5,133,081).

Regarding claim 12, Ballard teaches a broadcast monitoring and control system wherein a monitoring receiver **106** provides a feedback signal to the transmitter **100** indicating the quality of the received signal, which reads on "providing a backward channel to [a transmitter] for digital signals received in a target area"; in column 3, lines 10-12, Ballard teaches that upon receiving the transmitted signal, the monitoring receiver **106** determines the carrier-to-noise parameter value and a signal power processor **204** controls the modulator **200** such that the power of the transmitted signal is adjusted in accordance to the feedback signal from the monitoring receiver **106,** which reads on "using the backward channel to provide a high reception quality and coverage reliability." Ballard does not clearly teach that the transmitter is an AM transmitter.

In column 20, lines 27-31, Mayo teaches that the use of an AM transmitter meeting FCC guidelines is well known in the art. It would have been obvious for one of ordinary skill in the art at the time of the invention to use an AM transmitter in the broadcast monitoring and control system of Ballard, given that said transmitters characteristically exhibit a longer range thereby negating the need for a repeater in the broadcasting system.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Jensen (US 6,496,698) teaches relationship between frequency use and interference in cellular systems.

Matthew (US 6,295,443) teaches AM transmitter.

Gunnarsson (US 6,493,541) teaches adjustment of various signal parameters to effect signal quality.

Grob (US 5,881,368) teaches a method of signal quality control.

Henderson (US 6,208,842) teaches method configured in accordance with various protocols.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dionne N Harvey whose telephone number is 703-305-1111. The examiner can normally be reached on 9-6:30 M-F and alternating Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Kuntz can be reached on 703-305-4708. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dionne Harvey

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